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UNITED STATES DEPARTMENT OF AGRICULTURE  
OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING  
WASHINGTON, D. C.

FIELD LETTER FOR JUNE  
July 1, 1916.

No. 17.

DIVISION OF CONSTRUCTION  
Vernon M. Peirce, Chief.

Projects:

Advice and Inspection

C. H. Moorefield, S.H.E., left Washington June 1 to inspect the Ohio Post Road and to confer with the State Highway Commissioners at Columbus regarding its completion. He then proceeded to Richmond, Indiana, interviewed the county officials of Wayne County and made a detailed inspection. June 15-29 he conferred with the authorities of Hamilton County, Indiana, relative to concrete road construction. He was then assigned to inspect monolithic brick pavements at Paris, Illinois. He will return to Washington about July first.

W. A. Crossland, S.H.E., after a conference at the Washington Office, resumed his work of cooperation with the State Highway Commission of Mississippi on June 10.

W. H. Rhodes, H.E., left his assignment in Lawrence County, Tennessee, for a few days to deliver a lecture at McMinnville, Tennessee, on June 16th.

J. T. Voshell, S.H.E., was assigned June 26 to advise with the county authorities of Fayette County, West Virginia, relative to a system and types of road to construct from a \$1,400,000 bond issue. He returned to Washington about July first.

M. E. Worrell, H.E., completed his cooperation with the county engineer on the survey and plans for a system of roads in Monroe County, Tennessee, on June 10. June 11-13 he made an inspection of the model convict camp at Atlanta, Ga., preparatory to supervising the construction work in Marion County, Tennessee, in cooperation with the State Department of Highways, which is being conducted with the aid of convict labor. His headquarters are at South Pittsburg, Tennessee.

Object-lesson Roads

J. C. Wonders, S.H.E., was assigned June 1 to construct an earth object-lesson road in Dakota County, Nebraska, upon the completion of which he was assigned to construct an earth object-lesson road in Cedar County, Nebraska. His headquarters are at Hartington.

J. H. Dodge, S.R.C., inspected the roads of Marshall County, South Dakota, gave advice relative to their improvement, and constructed a section of object-lesson road. June 21 he was assigned to cooperate with the county officials of Ransom County, North Dakota, in the construction of an earth object-lesson road. He also gave lectures at Mahanomen, Minnesota, June 2 and 3, and at Hettinger, North Dakota, June 6 and 7.

is called to attention  
page 12 of this paper.



D. G. Haire, S.R.C., was assigned June 7 to The Plains, Virginia, to assist the officials of Scott District in Fauquier County in the resurfacing of an old macadam road with plain macadam.

#### County Systems

B. H. Burrell, S.H.E., was assigned June 1 to plan a system of roads for Cass County and to direct surveys in Christian County, Missouri, with headquarters at Harrisonville. He also gave an illustrated lecture before the Ozark Trails Association Convention at Springfield, Missouri, June 27.

H. H. Lotter, S.H.E., completed the report of the county system for Sunflower County, Mississippi, and was assigned on June 3 to make a survey of and prepare plans for about 12 miles of road in Tate County, Mississippi. His headquarters are at Senatobia.

#### Post Roads

J. T. Pauls, J.H.E., left Washington June 12 for Zanesville, Ohio, to assist Mr. Moorefield and to continue work on the post road.

#### General

J. W. Janssen, H. E., A. C. Dunn, J.H.E., and F. M. Lyons, J.H.E., were assigned June 26 to make a survey of unimproved portions of the Washington-Atlanta Highway, in Prince William County, Virginia, with headquarters at Dumfries, Va. It is expected that experimental work may be done on this road during the fiscal year 1917.

#### DIVISION OF MAINTENANCE

E. W. James, Chief.

#### Projects:

##### Advice, Inspection and Lectures

D. H. Winslow, S.R.C., lectured at Godwin, N. C., on June 5 and on June 21, attended the annual meeting of the North Carolina Good Roads Association at Wrightsville Beach, where he delivered an address on "Practical Methods of Maintenance."

V. E. Towles, H.E., appeared before the Hoke County Board at Raeford on June 5 in connection with the renewal of application for maintenance supervision of that county.

W. L. Spoon, S.H.E., is scheduled to appear before the North Carolina Rural Letter Carriers' Association at Greensboro on July 3 to deliver an address on road maintenance.

#### Washington-Atlanta Highway

Application has been received from Gwinnett County, Georgia, for an extension of maintenance supervision across that county. This was the only county on the Athens route between Augusta and Atlanta which had not previously made application.



As a result of the receipt of applications from every county concerned on the Athens route, the large amount of cooperation promised with respect to maintenance and the undertaking by McDuffie, Wilkes, and Oglethorpe Counties of considerable new construction, including two large bridges, a decision has finally been made to drop the supervision of maintenance from Thomson to Stone Mountain by way of Union Point and confine the work of this Office to the Athens route.

A definite decision appears to have been finally reached by Mecklenburg and Lunenburg Counties that they can not at this time construct the Meherin River bridge on the Washington-Atlanta Highway. As this was one of the conditions set at the time the route was changed to cross Lunenburg and Nottaway Counties, it may result in some alteration of the line in the near future.

The automobile census in Granville County for May, 1916, showed 659 cars, while the census in May 1915 showed but 540 cars.

#### Central Highway

Applications have been received from all the counties on the route and work is now in full swing. The total mileage, in addition to the section common with the Washington-Atlanta Highway, is 384.4. Of this 295 miles or 76.7 per cent are under application; 34.4 miles are within the limits of cities on the route so that only 14.3 per cent of county road from Morehead City to the Catawba River is not under application. Of this 14 per cent, 39.4 miles in Craven County are now under construction and will be put under application as soon as completed. Mr. Spoon has 236.5 miles in the western section, of which 205.5 miles are under application. Mr. Winslow has 147.9 miles in the eastern section, of which 89.5 miles are under application.

Wayne County is preparing to eliminate two grade crossings.

Boon Hill Township expects to call an election in August to provide funds by bond issue for the construction of that section of the Central Highway across the Township.

#### Field Experiments

Section 8 of South Kensington Road was retreated June 27. Cost data will be furnished later.

Retreatment of section 3 of the Rockville Pike was begun June 28 and is now in progress. It will be followed by the retreatment of section 7 of the Pike.

Materials have been received for a seal coat on Bradley Lane.

Three experiments were made in patching cracks on the concrete sections on North Kensington Road. The work was done by J. T. Pauls, J.H.E., with the assistance of a patrolman. The total cost of labor and materials was \$2.50. Description of the experiments will be given next month.

Retreatments of Sections 17 to 20, inclusive, of the Mt. Vernon Avenue Road were begun May 25 and finished June 12. Cost data will be given next month.





The Russell Road has been completed and inspected by this Office. Inspection by the county officials will be made within a few days, after which the road will be taken over for maintenance. J. M. Whitehead, the present patrolman on Mt. Vernon Avenue, will be placed on the work.

NATIONAL PARK AND FOREST ROADS  
T. Warren Allen, Chief.

Projects:

National Forest Roads

District No. 2 - A. E. Palen in charge.

Office: The plans and estimates for the Sedalia-Decker Springs Road were fully completed and presented for approval and consideration. These plans cover 12 miles of an 18-mile road across the front range in the Pike National Forest. This road connects the city of Denver with the South Fork of the South Platte, an important area for recreation and fishing. It also shortens the drive to Cripple Creek by 30 miles. The type of construction is planned for 3rd class, it being a feeder road.

One assistant engineer and one transitman reported for assignment on road design. They spent 2 to 3 weeks in the office before being assigned to a location party in the Mount Evans region.

Three survey parties were put into the field for the season's work on road design.

Field: Reconnaissance and location surveys were started on the Stony River Road across the Superior National Forest in Minnesota. This road is a feeder to the Duluth-Lake Shore Road, a state highway, connecting up the town of Ely and a number of farming communities. After a location survey on two sections of the 31 miles in the National Forest, the engineer in charge will handle the construction work on a 5-mile section to be constructed this year.

Into the Mount Evans region of the Pike National Forest a location survey is being run over the most likely route, while on other probable routes branching from this, transit fly lines are being put through. The area is large and unsurveyed and under this plan a careful investigation will be made of all routes possible that will open up this region to tourist travel and permit an ascent to the summit of Mt. Evans. The located line will serve as a control survey.

A location survey and stakes for construction are being placed on the Sloss-Ruedi section (6 miles) of the Frying Pan Road up the Frying Pan River from Glenwood Springs and Basalt.

Maintenance was started on the 16.5 miles of the Rabbit Ear Road that has been constructed to date. This work is handled by two patrols camped along the road and in charge of an assistant ranger assigned to roads, who is stationed at the maintenance camp on the top of the range and about mid-way on this road. An old ranger cabin, barn, and pastures were rehabilitated for this purpose.



The Cochetopa Pass Road, constructed in 1913 and 1914, has been open since April first under maintenance carried on by one patrol and has now assumed a fairly permanent condition for the season.

Construction and maintenance both have been opened on the Buffalo-Hazleton Road. Both are under the same supervision since the construction work will be light this year (the bulk of this year's money in Wyoming being allotted for roads in the western part of the State) and will consist only of the completion of some work left unfinished last fall when snow came. The completion of this work will open all constructed roads to travel. A couple of short stretches on the located line will also be constructed, which will eliminate some swampy areas on the present road in the next construction unit.

Beginning with this year it is planned to place the job supervision on the construction and maintenance of roads in Wyoming and South Dakota under the ranger now assigned for work to roads in Wyoming. As a rule the roads in the Black Hills are in good condition for the season's travel and the maintenance organized and well under way when the roads in Wyoming are free from snow and open to travel. The construction work will be alternated annually. This plan will effect a saving in overhead expenses. The average annual expenditure for both States approximates \$20,000.

Reconnaissance surveys have been made for the Mosca Pass and the Pueblo-Wet Mountain Valley Roads on the San Isabel National Forest in Colorado and their reports have been completed. Similar surveys are now being made for the Dayton-Tongue River Road and the portion of the Bighorn-Hyattville Road on the east side in the Bighorn National Forest in Wyoming. These two roads meet and are a portion of the "Circle Drive" out of Sheridan, Wyoming, into the Bighorn Mountains.

District No. 4. Ten Per Cent Roads - C. H. Kendall in charge.

In the Kaibab Forest, Arizona, a small crew has been making repairs and doing maintenance work upon the Ryan-Big Spring Road. Constructive repairs have been started upon the 16-mile section of the Grand Canyon Highway and maintenance work upon a 30-mile section. A severe wind storm has obstructed the road for many miles with fallen timber.

In Idaho, general maintenance work has been done upon the Payette River Road.

In Nevada, the Secret Pass Road, Ruby National Forest, has been completed and opened to travel. The construction equipment has been transferred to the Manti project.

In Utah, construction work has progressed rapidly upon the Ephraim-Orangeville Road, Manti National Forest, on both sections in San Pete and Emery Counties, respectively, with State and county contributed funds. Donation labor in these counties has been less this month owing to agricultural demands on labor.

In the Uinta Forest, construction work has been started upon the Kamas-Stockmore Road which will continue all the season, and it is expected to complete the ten miles of new location to the Uinta Basin.



Construction work has been started upon the "Cut-off" section of the Modena-St. George Road, Dixie National Forest, from Enterprise to Central. The new location of eight miles reduces the distance between Enterprise and Central from 21 miles to 15 miles. Four miles have already been constructed by the County and donation labor.

Maintenance work has been done during the month upon the Winder-Escalante Road in the Powell National Forest; upon the Salina-Fish Lake Road and the Salina-Emery Road in the Fish Lake Forest; upon the Beaver Creek Road in the Wasatch; and upon the Daniels Canyon Road in the Uinta. Maintenance work is in progress upon the Logan-Garden City Road in the Cache National Forest.

One survey party is cross sectioning and completing location work upon the Manti and one party is restaking the location for construction done in 1914 upon the Kamas-Stockmore Road.

Dry weather and strong winds have prevailed during the month.

District No. 5 - C. C. Morris in charge.

Trinity River Road: Work continued on this project, 75 men and eight teams being employed. At the end of the month a total of four miles of road was complete. The air compressor plant arrived near the end of the month and will be placed in operation soon.

What is probably the first right-of-way condemnation suit under the operations of the 10% Road Fund was heard in the Federal Court in San Francisco on June 13th. A jury was waived and the Court rendered judgement for a total of \$550.00 in favor of two defendants. This is \$125.00 less than the amount offered in an endeavor to reach a settlement.

Salmon River Road: The location survey of this project was started on June 10. Four miles of line was run out, the design completed, and slope stakes set in order that construction work may be instituted immediately after June 30.

Laguna Road: The design of this project was completed on June 15th and the plans forwarded to the Chief Engineer of the Forest Service for approval.

The collection of data to be used in compilation of Forest and State Road Base Maps was begun. A draftsman is visiting the forests for this purpose.

District No. 6 - B. J. Finch in charge.

The road work in District 6 has been for the most part carried on in the field, so that the office work has been confined to correspondence and such work on reports as was absolutely necessary.

During the month one survey party has been at work on the McKenzie River Road, being engaged for the first part of the month in staking out 3 miles for construction under an allotment of \$8,000 which has been approved by the Forester. The remainder of the month has been spent by this party in the survey of about 3 miles from the eastern end of the section which is to be constructed this year to the summit of McKenzie Pass.





A small survey party of four men has been temporarily employed on a survey of that portion of the Blewett Pass Road lying in Kittitas County in the Wenatchee National Forest. This survey will be completed this month and the plans for construction immediately worked up.

Construction work on the Elk Creek Road closed on June 17, work having been in progress since November 8, 1915, under an allotment of \$5,000 from the 10 per cent fund, together with \$5,000 contributed by the County, this last sum having been expended under the direction of the Forest Service. About one and one-half miles of road have been completed, the location being along a very steep, rocky hillside, necessitating heavy construction.

Work began on the construction of the McKenzie River Road in the Cascade National Forest on May 27 under the allotment of \$8,000 mentioned above. A force of about 18 men and 3 teams is being used on this work, which is in a material consisting mostly of loose lava rock and cinders mixed with the top soil. This section will eliminate some of the worst grades on the west side of McKenzie Pass.

Work is in progress on the cleaning up of the Little White Salmon Road, the construction of which was begun in 1915. A small force of 4 or 5 men, with 3 teams of Government mules, is being used on this road.

The maintenance work for this District has been practically completed for this year and reports are now being received for the work which has been done up to date on the Alsea River and Cape Perpetua Roads in the Siuslaw National Forest, the Ashland Road in the Crater National Forest, the Prineville-Mitchell Road in the Ochoco National Forest, the McKenzie River Road in the Cascade National Forest, the Stehekin Valley Road in the Chelan National Forest and the Wind River Road in the Columbia National Forest. These reports are being tabulated in the office and when found necessary they are being returned to the Forester for correction.

J. T. Schuyler in charge - Skamania County, Washington.

The weather during the past month has been favorable for road work, and on two of the contracts suitable progress is shown. The work on the Mill A - Underwood section is progressing in fine shape. The contractor has finished grading 7 miles of road and expects to finish the remainder of his contract about August first.

The Stevenson-Collins Section is about as reported last month except for the construction of two timber trestles.

The contractor on the Clarke County Line - Cascades Section has about ten station gangs besides a large force account at work.

The plans and estimate for the permanent highway work on Mill A Flat have been finished and bids for this work will be called for on July 21st.





Franklin County, Idaho work - T. C. Peterson, J.H.E., in charge.

The survey on the Preston-Dayton-Clifton road has been completed, grade stakes set and nearly all the rough grading is finished. A course of clay has been added for a distance of 25 stations, and 30 stations have been graveled. Excavation in loose sand cost a fraction less than 10 cents per cubic yard.- Grading with a 24 horse power traction engine, drawing two graders with 8-foot blades cost about \$75 a mile, making grade 20 feet wide.

On the Dayton-Weston Road (250 station) center line has been located and the grading completed.

The road from Preston to the Utah State line via Fairview, has been staked out and grading will begin soon.

The Battle Creek Hill road (104 station) has been surveyed and grade stakes set.

Medford-Crater Lake Highway Survey - J. W. Ball in charge.

Field work on this survey was begun on May fifteenth. During the month about 14 miles of the survey were completed. During the month of July mile thirty-three of the survey will be reached.

The location runs northward from Medford for a distance of ten miles across the valley, then follows up the Rogue River. The country along the river is rough and covered with brush.

The transit line, profile, and cross-sections are kept plotted and a temporary grade line established as the survey progresses.

The survey is being made by an eleven-man party (including the cook) and for the first 28 miles the average cost per mile has been approximately \$55, exclusive of the expense to the Office of Public Roads and Rural Engineering.

#### DIVISION OF ROAD MATERIAL TESTS AND RESEARCH

Prevost Hubbard, Chief.

Projects:

##### Administration

H. A. Draper, who has been in the laboratory as student assistant for the past two summers, has reported for duty during the present summer.

J. W. Stockett, has also been added to the laboratory force as a student assistant.

##### Routine Tests and Analyses

During June 34 samples were examined in the Chemical Laboratory, of which 27 were bituminous materials and 7 galvanized metal. 71 samples of rock, sand, gravel, etc., were received in the Physical Laboratory, and 81 samples were examined. 62 samples were examined and classified in the Microscopic Laboratory.



## Research Upon the Properties of Dust Preventives and Road Binders

B. Kamrass assisted the Marine Corps in constructing rifle butts at an indoor range in this city. The butts were made in the form of a box 12 inches thick, faced back and front with 2-inch planks, filled with four different types of bituminous material. California asphalt, blown and unblown Mexican, and blown Texas asphalt were used. These materials are being tried as a result of previous experiments in which it seemed to be demonstrated that bituminous materials of the above character offered considerable resistance to the passage of ordinary rifle bullets.

The experimental refining plant on the Arlington Farm is well under way, and it is expected that some research work can be undertaken there in a short time.

## Experimental Bituminous Road Construction and Maintenance

B. A. Anderton went to Knoxville, Tennessee, for a few days to consult with local authorities regarding bituminous concrete construction now under way. He also made a brief investigation of some reported metal culvert failures in North Carolina. Mr. Anderton is now at Tuscaloosa, Alabama, supervising the surface treatment of several miles of gravel road.

## Concrete Investigations

The new building for making tests on the distribution of pressure through soils is now almost completed, and tests will be started during the coming month. Measurements of pressure will be made with the soil pressure apparatus recently designed, and built in the Office. This apparatus was described in a paper presented before the American Society for Testing Materials by Messrs. Goldbeck and Smith.

The large reinforced concrete slab 16-foot span, 32 feet in width, and 16 inches in thickness (the heaviest slab yet formed) will be tested within a few days. Arrangements have been made to change the width of this slab after each test, so that the influence of the width on effective width may be obtained.

A number of soil pressure tests have been completed during the past month, and are ready to be put into service.

Mr. Goldbeck attended a meeting of the American Society for Testing Materials at Atlantic City on June 28 and 29 for the purpose of presenting a paper, and to meet with Committees C-1, C-9, and D-4, on Portland Cement, Concrete Aggregate, and Road Materials.

## Physical Research

Investigation of road-building top-soils was continued during the early part of the month of June. Density determinations on compressed soils were made for the purpose of learning what relation, if any, the density of soil mixtures bore to their behavior in service.



A design for a grinding machine for the preparation of compression specimens was made by Mr. Harsch and approved by Mr. Hubbard. Details of this machine will be worked out in the near future.

Work on the pavement sections for determining the effect of various cushions and fillers on the toughness of brick roads and pavements is progressing and concrete bases have been made which will be tested in the large impact machine within the next few weeks.

#### Standardization of Methods

Special attention was given to the determination of the specific gravity of gravels and slags for additional data on the subject of methods for the determination of the apparent specific gravity of non-homogeneous road materials.

Mr. Hubbard and Mr. Jackson attended to the meeting of the American Society for Testing Materials at Atlantic City where their paper on "The Specific Gravity of Non-Homogeneous Aggregates" was presented.

The experiments for developing a new consistency test for fluid bituminous materials are being continued.

Preparations have been made for a series of tests relative to the proposed standard tests of concrete drain tile. Further work along this line will be carried on as soon as possible.

#### DIVISION OF ROAD ECONOMICS J. E. Pennybacker, Chief.

Projects:

##### Statistical Investigations

The galley proof of the road mileage bulletin for the Middle Atlantic States has been returned from the printer. The bulletin for the Southern States is ready for the printer, and the New England States will be the next, as the information for these States is now complete and in the Office. The balance of the States will be included in a subsequent bulletin.

All information has been gathered and the data prepared for the circular on state highway mileage and expenditures for 1915. The manuscript is now ready to be placed in the hands of the printer.

##### Lectures and Road Models

L. E. Boykin addressed a series of meetings of citizens of Nicholas County, West Virginia, at Richmond and in vicinity, on June 5-7, in interest of a proposed bond issue.

Mr. Pennybacker delivered an address before the North Carolina Good Roads Convention at Wrightsville Beach, N. C., on June 23. He also addressed the special session of the State Legislature of Louisiana, at Baton Rouge, on June 27, in the interest of a proposed \$18,000,000 state road bond issue.





Sets of road models were returned during the month of June from the Exposition in celebration of the opening of the Panama Canal at Panama City; and also from the Newark Industrial Exposition at Newark, N. J.; and from the annual meeting of the Michigan State Good Roads Association recently held at Battle Creek, Michigan.

#### Economic Post Road Studies

W. E. Rosengarten, during the month of June, completed the final studies of the post roads in Boone and Story Counties, Iowa; Muskingum and Licking Counties, Ohio; and Bath and Montgomery Counties, Kentucky, and is now in the Office writing up his reports. His work was interrupted for some time this month by a trip to Philadelphia when he was married.

The camp in Fulton County, Georgia, was moved to a new location the latter part of the month. Mr. Pennybacker and Mr. Fairbank went to Atlanta to be present at the moving of the camp.

#### DIVISION OF RURAL ENGINEERING E. B. McCormick, Mechanical Engineer. Chief of Division.

#### Projects:

Mr. McCormick attended the annual meeting of the National Gas Engine Association, held at Chicago June 27-29.

#### Domestic Water Supply and Sewage Disposal

Under the direction of George M. Warren, D.E., a 500-foot sewer has been laid out at the Beltsville Experimental Farm; the trenching will be started about July 1.

A. D. Morehouse, D.E., has designed a large concrete reservoir which it is expected will be constructed at the Beltsville Farm for the Bureau of Animal Industry.

Work is in progress on the bulletin on Farm Water Systems and the Yearbook article on Sewage Disposal on the Farm.

Mr. Warren spent the last week of June in Atlanta and Rome, Ga., in consultation with officials of the Berry School of Country Life in connection with the contemplated installation of a water-supply system.

#### Farm Structures

Work on the farmstead model has been again delayed. It is hoped that it will be completed within the month.

Drawings for a horse barn and plans for a general barn to meet conditions prevailing in the Northern States have been completed and will be published within a short time.

Over 5300 requests for the plans of the small Southern farmhouse, published in the News Letter of March 29, have been received. Most of these were in response





to newspaper accounts which were not illustrated. In response to such inquiries of the News Letter article were sent with a statement that working drawings were available to those who wished to build the house. Over 800 sets of the working drawings have been issued.

Since the publication, in the News Letter of June 7, of a hay shed designed in the Division, over 100 requests for the working drawings have been received. Considering the late date of publication, the demand is considered gratifying.

Drawings for a combined machine and wagon shed and shop have been completed and will soon be available for distribution.

Working drawings for two cottages to be erected at the Iberia Experiment Station are practically completed. Sketches for a third house have been approved.

Working drawings for a cottage to be erected by the Bureau of Animal Industry on a sheep ranch in Idaho are nearing completion.

Wallace Ashby has prepared several sketch designs for hog houses suited to conditions on certain of the reclamation projects where at present cheapness is of prime importance. These structures are based on the results of his investigations made last winter.

#### Field Experiments

Computations are being made of the results of the final tests on the Texas Post Road completed in May.

Elmer Johnson, A.M.E., completed the final tests on the North Carolina Post Road June 12, and the dynamometer wagon was shipped to Washington, D. C.

#### Thresher Explosions

The Department Weekly News Letter of June 7 contained an illustrated account of the experimental work done on smut dust explosions, the illustrations showing the fire extinguishing and prevention devices designed in this Division. A bulletin on the subject of smut dust explosions is in the printer's hands and should be available within a week or two.

The States Relations Service has made arrangements for exhibiting and demonstrating the apparatus in Washington, Oregon, and Idaho. It is expected that Elmer Johnson, one of the designers of the fire extinguisher, will conduct the demonstrations.



DIVISION OF ACCOUNTS  
W. C. Wyatt in charge

For the information and guidance of all field men:

TRUNK LINE ASSOCIATION  
143 Liberty Street,  
New York.

May 4, 1916.

Department of Agriculture,  
Washington, D. C.

Gentlemen:

Referring to the following communication from the Comptroller of the Treasury, 1st instant, on above subject:

"I have your letter of April 20, 1916, as follows:

" 'I beg to state that on the 5th instant called at your office in connection with proposition that U. S. Government orders calling for tickets from New York to points on and via the Baltimore & Ohio R. R. beyond Philadelphia, Pa., be drawn to read so far as the honoring of same is concerned 'Baltimore & Ohio R. R. or Central R. R. of N. J.' with the understanding that whichever of the two roads honors the orders such road will bill same against the U. S. Government. The reason for making the above request, as explained at the conference, is that the arrangements of the Baltimore & Ohio R. R. of N. J. in New York are of a common character so that in the past the orders drawn on the Baltimore & Ohio R. R. alone have been honored by the Central R. R. of N. J., and as result complications have arisen with respect to the settlement for the orders, and by the drawing of the orders in the way suggested, under which they will be honored by either of them, it will remove same.

" 'It is understood that it will be necessary for me to write each of the Administrative Departments of the Government issuing U. S. Government orders, but before doing so will be glad if you will kindly confirm my understanding had at the conference that in so far as your Department is concerned you can see no objection to the arrangement.'

"This office sees no objection to the proposed arrangement and settlement for services furnished in accordance with requests so drawn may be made with the particular company which honors the same."

If you will be good enough to issue instructions to those authorized to draw U. S. Government transportation requests in conformity with the above letter and acknowledge receipt that you have arranged accordingly it will be appreciated.

Yours truly,

(Signed) S. L. Hunter

Please advise the employees of your bureau to comply with the above request.



DIVISION OF DRAINAGE INVESTIGATIONS  
S. H. McCrory, Chief.

Projects:

Administration

Willis E. Comfort on June 22 advised the Office that he had enlisted with the National Guard of the District of Columbia. At present he is connected with Company H, 3rd Regiment, stationed at Radio, Va. On June 28 he was mustered into the Federal Service. So far as we are advised Mr. Comfort is the only man from the Office of Public Roads and Rural Engineering, who has enlisted.

Geo. R. Boyd has been appointed on the force as Senior Drainage Engineer, effective July 17; Wm. L. Unger has been appointed as Junior Drainage Engineer, effective July 1.

I. W. Hall who has been with the Office a little over a year as Copyist Topographic draftsman has been transferred to the Bureau of Soils. He will be succeeded by Oscar Kreidler.

A. C. Dunn who has been assisting in the Office and on the Arlington Farm has again resumed work under the direction of Mr. Peirce.

On June 1, Mr. McCrory inspected the Big Creek Drainage District near Carrollton, Missouri. While at Carrollton he inspected the terraces constructed by H. M. Lynde last year on farms in that section. Excellent results have been obtained from these terraces. Their value as a demonstration is evidenced by the fact that the Missouri Extension Service has requested that Mr. Lynde be permitted to spend at least a month on similar work in Missouri.

On June 3, Mr. McCrory conferred with O. G. Baxter at Little Rock concerning work in Arkansas and Oklahoma. On June 5 Mr. McCrory met in conference at Owensboro, Kentucky, the officials of the Panther Creek Drainage District. The question of liability for constructing railroad bridges across drainage ditches was discussed and final location for Panther Creek decided. On June 7, Mr. McCrory inspected lands along the Saginaw River, Michigan, which it is desired to protect. From Saginaw Mr. McCrory proceeded to Washington where he remained until June 13, leaving on that date for Livermore Falls, Maine, where on June 14-15 he inspected some lands which it is proposed to reclaim. An examination of similar lands was made at Denmark, Maine, June 16.

On June 20, Mr. McCrory, representing this Office, attended a meeting of the Committee on Cooperative tests of cement tile at the U. S. Bureau of Standards.

The cooperative agreement with the Alabama Experiment Station and the North Carolina Department of Agriculture have been renewed. A cooperative agreement has been made with the Georgia Agricultural College for cooperative drainage investigation in the State of Georgia. J. V. Phillips, D.E., will have charge of the work with headquarters at Athens, Ga.





### Farm Drainage

During the month Fred F. Shafer rendered assistance to farmers in New Jersey, Delaware, and Maryland. He is at present engaged in similar work in Kentucky and West Virginia.

O. G. Baxter reports that 14,000 feet of tile have been laid during the spring on the Page-Hart farm, and that a drainage system has been installed on the Lucy farm, Hot Springs County, Arkansas, according to the plans prepared by him.

In the June letter under "Reports Transmitted" the Gaither's farm report was erroneously credited to H. M. Lynde instead of F. R. Baker.

#### Reports Transmitted:

- D 6 Holland Farm (cost and construction data) Northampton Co., Va. by J. R. Haswell.
- D 29 Lucy Farm (cost and construction data) Hot Springs Co., Ark., by O. G. Baxter.
- D 43 Farm Drainage in Humid Regions of California, by W. W. Weir. (To be published by California Experiment Station)

#### Reports Received:

- D 19 Glen Carse Farm, Cedar Co., Mo., by O. G. Baxter.

### Overflowed Lands

O. C. Ayres has been assigned to assist W. N. Hall on investigations on various streams in the Grand River watershed, Missouri.

From June 12-16, O. G. Baxter was engaged on a preliminary examination of lands along Brown Creek, Oklahoma.

F. G. Eason and S. W. Frescoln have completed the survey of the Eighteen Mile Creek Drainage District. Mr. Eason is now engaged on the report and map at the Charleston Office. Mr. Frescoln is in the Washington Office assisting in the review of reports and plans.

On June 10, Lewis A. Jones left for Bonners Ferry, Idaho, to collect data during the high stages of the Kootenai River. Mr. Jones reports the water higher this year than any year since 1894. In his work he was assisted by W. A. Kelly.

J. W. Phillips, after making several preliminary examinations in Georgia, has returned to the Washington Office.

C. E. Ramser conferred with officials of a drainage district near Pipestone, Minnesota.

#### Reports Transmitted:

- D 5 Stockton Ditch, Worcester Co., Md., by J. R. Haswell.
- D 31 Clear Boggy Creek Drainage District, Coal Co., Okla., by O. G. Baxter.





Reports Received:

D 13 Salamonina River, Jay Co., Ind., by Fred F. Shafer.

Swamp Lands

During the month J. R. Haswell made a survey of lands in Cedar Swamp and along the Pocomoke River, Delaware. He is now engaged on the report and plans.

Reports Transmitted:

D 8X Big and Little Alligator Swamps, Bruhswick Co., N. C., by H. M. Lynde

Irrigated Lands

D. G. Miller has been engaged during the month writing a summary of the activities of the division in Colorado since he first entered the State and on the present outlook for drainage in that State. It is quite likely the report will be published by the State Engineer.

Reports Transmitted:

D 36 Wiley Drainage District, Prowers Co., Colo., by L. T. Jessup.

D 43B Alkali Determinations on Kearney Vineyard Experimental Drain, Cal., by W. W. Weir.

Run-Off Investigations

Dan S. Helmick has been assigned to assist C. E. Ramser on run-off work in Iowa.

Legal, Financial and Organization

A compilation of the drainage laws of all the States has been made, including the law passed in 1915. In most instances the Office has more than one copy of the law of each State. An effort will be made to keep two copies so that there will always be one in the Office and another copy available for loaning to the field men.

The members of the Investment Bankers Association of America have been circularized to ascertain what houses handle drainage securities as well as to obtain other information relating to the financing of drainage districts. From the returns received a list was prepared of those houses which are in the market for drainage bonds. Since mailing copies of this list to the members of the staff reports indicating that they handle drainage bonds have been received from the following:

Little and Hayes, 304 No. 4th St., St. Louis, Mo.

Palmer Bond and Mortgage Co., Walker Bank Bldg., Salt Lake City, Utah.

The Portland Trust Co., Portland, Oregon.

The two last mentioned companies deal in the securities of districts in the arid regions.

1900 - 1901

1902 - 1903

DIVISION OF IRRIGATION INVESTIGATIONS  
Samuel Fortier, Chief.

Projects:

Administration

Dr. Fortier left the Office June 27 for two weeks' leave. He will return to Washington about the middle of July and will then proceed on an inspection trip. Mr. Teele is in charge of the Washington Office during Dr. Fortier's absence.

Utilization of Water

C. E. Tait, I.E., has completed a preliminary report on the spreading of storm waters to increase the underground supply in the Coachella Valley, California.

F. W. Stanley, I.E., left Florida early in the month of June for Washington, D. C., visiting various points in the Southern States on his way north. After spending a few days in Washington he proceeded to New England to look after work in that section.

The report of George A. Knapp, Supt. of the Garden City Substation of the Kansas Agricultural Experiment Station, covering cooperative irrigation work at the substation, has been received.

Guy Ervin left the Washington Office June 24 for field work in Connecticut. He will make observations on irrigation of tobacco in the vicinity of Hartford.

W. W. McLaughlin, I.E., has completed experiments on capillarity in the soils taken from the vicinity of Riverside, California, and has begun similar experiments on soils from Whittier, California.

Pumping

Arrangements have been made for the completion of the pump tests begun by F. L. Bixby, I.E., at New Mexico Station. D. W. Bloodgood, who assisted Mr. Bixby in the tests made in New Mexico, will complete the tests and Mr. Bixby will prepare a report during the coming winter.

C. E. Tait, I.E., has been assisting in tests of new apparatus for raising water from wells by means of siphons. A report on these tests has not yet been prepared.

Questions, Regulations and Laws

F. G. Harden, I.E., left Washington June 15, for field study of public control of irrigation and cooperative companies. His present trip will take him through the southwestern states.

Drainage of Irrigated Lands

R. A. Hart, S.D.E., has spent most of the month of June in the Salt Lake City Office, preparing a Farmers' Bulletin on the drainage of irrigated lands.

W. W. Weir, S.D.E., has submitted a report on the drainage of a part of the University Farm at Davis, California.

21

to the proper authorities for their consideration  
and approval.

to the proper authorities for their consideration  
and approval.

Very truly yours,  
[Signature]

## FEDERAL AID IN THE CONSTRUCTION OF ROADS

The Good Roads Bill, appropriating \$85,000,000 within the next five years for the purpose of aiding the states in the construction of rural post roads, has been passed by both Houses of Congress and is now before the President for approval. The bill reads substantially as follows:

"That the Secretary of Agriculture is authorized to cooperate with the States, through their respective State highway departments, in the construction of rural post roads; but no money apportioned under this Act to any State shall be expended therein until its legislature shall have assented to the provisions of this Act, except that, until the final adjournment of the first regular session of the legislature held after the passage of this Act, the assent of the governor of the State shall be sufficient. The Secretary of Agriculture and the State highway department of each State shall agree upon the roads to be constructed therein and the character and method of construction: Provided, That all roads constructed under the provisions of this Act shall be free from tolls of all kinds.

"Sec. 2. That for the purpose of this Act the term 'rural post road' shall be construed to mean any public road over which the United States mails now are or may hereafter be transported, excluding every street and road in a place having a population, as shown by the latest available Federal census, of two thousand five hundred or more, except that portion of any such street or road along which the houses average more than two hundred feet apart; the term 'State highway department' shall be construed to include any department of another name, or commission, or official or officials, of a State empowered, under its laws, to exercise the functions ordinarily exercised by a State highway department; the term 'construction' shall be construed to include reconstruction and improvement of roads; 'properly maintained' as used herein shall be construed to mean the making of needed repairs and the preservation of a reasonably smooth surface considering the type of the road; but shall not be held to include extraordinary repairs, nor reconstruction; necessary bridges and culverts shall be deemed parts of the respective roads covered by the provisions of this Act.

"Sec. 3. That for the purpose of carrying out the provisions of this Act there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, for the fiscal year ending June thirtieth, nineteen hundred and seventeen, the sum of \$5,000,000; for the fiscal year ending June thirtieth, nineteen hundred and eighteen, the sum of \$10,000,000; for the fiscal year ending June thirtieth, nineteen hundred and nineteen, the sum of \$15,000,000; for the fiscal year ending June thirtieth, nineteen hundred and twenty, the sum of \$20,000,000; and for the fiscal year ending June thirtieth, nineteen hundred and twenty-one, the sum of \$25,000,000. So much of the appropriation apportioned to any State for any fiscal year as remains unexpended at





the close thereof shall be available for expenditure in that State until the close of the succeeding fiscal year, except that amounts apportioned for any fiscal year to any State which has not a State highway department shall be available for expenditure in that State until the close of the third fiscal year succeeding the close of the fiscal year for which such apportionment was made. Any amount apportioned under the provisions of this Act unexpended at the end of the period during which it is available for expenditure under the terms of this section shall be reapportioned, within sixty days thereafter, to all the States in the same manner and on the same basis, and certified to the Secretary of the Treasury and to the State highway departments and to the governors of States having no State highway departments in the same way as if it were being apportioned under this Act for the first time: Provided, That in States where the constitution prohibits the State from engaging in any work of internal improvements, then the amount of the appropriation under this Act apportioned to any such State shall be turned over to the highway department of the State or to the governor of said State to be expended under the provisions of this Act and under the rules and regulations of the Department of Agriculture, when any number of counties in any such State shall appropriate or provide the proportion or share needed to be raised in order to entitle such State to its part of the appropriation apportioned under this Act.

"Sec. 4. That so much, not to exceed three per centum, of the appropriation for any fiscal year made by or under this Act as the Secretary of Agriculture may estimate to be necessary for administering the provisions of this Act shall be deducted for that purpose, available until expended. Within sixty days after the close of each fiscal year the Secretary of Agriculture shall determine what part, if any, of the sums theretofore deducted for administering the provisions of this Act will not be needed for that purpose and apportion such part, if any, for the fiscal year then current in the same manner and on the same basis, and certify it to the Secretary of the Treasury and to the State highway departments, and to the governors of States having no State highway departments, in the same way as other amounts authorized by this Act to be apportioned among all the States for such current fiscal year. The Secretary of Agriculture, after making the deduction authorized by this section, shall apportion the remainder of the appropriation for each fiscal year among the several States in the following manner: One-third in the ratio which the area of each State bears to the total area of all the States; one-third in the ratio which the population of each State bears to the total population of all the States, as shown by the latest available Federal census; one-third in the ratio which the mileage of rural delivery routes and star routes in each State bears to the total mileage of rural delivery routes and star routes in all the States, at the close of the next preceding fiscal year, as shown by the certificate of the Postmaster General, which he is directed to make and furnish annually to the Secretary of Agriculture.

"Sec. 5. That within sixty days after the approval of this Act the Secretary of Agriculture shall certify to the Secretary of the

TO THE  
NEW YORK  
OFFICE OF THE  
ATTORNEY GENERAL

RECEIVED  
JAN 10 1961  
U.S. DEPT. OF JUSTICE  
FEDERAL BUREAU OF INVESTIGATION  
WASHINGTON, D.C.



Treasury and to each State highway department and to the governor of each State having no State highway department the sum which he has estimated to be deducted for administering the provisions of this Act and the sum which he has apportioned to each State for the fiscal year ending June thirtieth, nineteen hundred and seventeen, and on or before January twentieth next preceding the commencement of each succeeding fiscal year shall make like certificate for such fiscal year.

"Sec. 6. That any State desiring to avail itself of the benefits of this Act shall, by its State highway department, submit to the Secretary of Agriculture project statements setting forth proposed construction of any rural post road or roads therein. If the Secretary of Agriculture approve a project, the State highway department shall furnish to him such surveys, plans, specifications, and estimates therefor as he may require: Provided, however, That the Secretary of Agriculture shall approve only such projects as may be substantial in character and the expenditure of funds hereby authorized shall be applied only to such improvements. Items included for engineering, inspection, and unforeseen contingencies shall not exceed ten per centum of the total estimated cost of the work. If the Secretary of Agriculture approve the plans, specifications, and estimates, he shall notify the State highway department and immediately certify the fact to the Secretary of the Treasury. The Secretary of the Treasury shall thereupon set aside the share of the United States payable under this Act on account of such project, which shall not exceed fifty per centum of the total estimated cost thereof. No payment of any money apportioned under this Act shall be made on any project until such statement of the project, and the plans, specifications, and estimates therefor, shall have been submitted to and approved by the Secretary of Agriculture.

"When the Secretary of Agriculture shall find that any project so approved by him has been constructed in compliance with said plans and specifications he shall cause to be paid to the proper authority of said State the amount set aside for said project: Provided, That the Secretary of Agriculture may, in his discretion, from time to time make payments on said construction as the same progresses, but these payments including previous payments, if any, shall not be more than the United States' pro rata part of the value of the labor and materials which have been actually put into said construction in conformity to said plans and specifications; nor shall any such payment be in excess of \$10,000 per mile, exclusive of the cost of bridges of more than twenty feet clear span. The construction work and labor in each State shall be done in accordance with its laws, and under the direct supervision of the State highway department, subject to the inspection and approval of the Secretary of Agriculture and in accordance with rules and regulations made pursuant to this Act.

"The Secretary of Agriculture and the State highway department of each State may jointly determine at what time, and in what amounts, payments, as work progresses, shall be made under this Act. Such payments shall be made by the Secretary of ~~the Treasury~~



on warrants drawn by the Secretary of Agriculture, to such official, or officials, or depository, as may be designated by the State highway department and authorized under the laws of the State to receive public funds of the State or county.

"Sec. 7. To maintain the roads constructed under the provisions of this Act shall be the duty of the States, or their civil subdivisions, according to the laws of the several States. If at any time the Secretary of Agriculture shall find that any road in any State constructed under the provisions of this Act is not being properly maintained he shall give notice of such fact to the highway department of such State and if within four months from the receipt of said notice said road has not been put in a proper condition of maintenance then the Secretary of Agriculture shall thereafter refuse to approve any project for road construction in said State, of the civil subdivision thereof, as the fact may be, whose duty it is to maintain said road, until it has been put in a condition of proper maintenance.

"Sec. 8. That there is hereby appropriated and made available until expended, out of any moneys in the National Treasury not otherwise appropriated, the sum of \$1,000,000 for the fiscal year ending June thirtieth, nineteen hundred and seventeen, and each fiscal year thereafter, up to and including the fiscal year ending June thirtieth, nineteen hundred and twenty-six, in all \$10,000,000, to be available until expended under the supervision of the Secretary of Agriculture, upon request from the proper officers of the State, Territory, or county for the survey, construction, and maintenance of roads and trails within or only partly within the national forests, when necessary for the use and development of resources upon which communities within and adjacent to the national forests are dependent: Provided, That the State, Territory, or county shall enter into a cooperative agreement with the Secretary of Agriculture for the survey, construction, and maintenance of such roads or trails upon a basis equitable to both the State, Territory, or county, and the United States: And provided also, That the aggregate expenditures in any State, Territory, or county shall not exceed ten per centum of the value, as determined by the Secretary of Agriculture, of the timber and forage resources which are or will be available for income upon the national forest lands within the respective county or counties wherein the roads or trails will be constructed; and the Secretary of Agriculture shall make annual report to Congress of the amounts expended hereunder.

"That immediately upon the execution of any cooperative agreement hereunder the Secretary of Agriculture shall notify the Secretary of the Treasury of the amount to be expended by the United States within or adjacent to any national forest thereunder, and beginning with the next fiscal year and each fiscal year thereafter the Secretary of the Treasury shall apply from any and all revenues from such forest ten per centum thereof to reimburse the United States for expenditures made under such agreement until the whole amount advanced under such agreement shall have been returned from the receipts from such national forest.

"Sec. 9. That out of the appropriations made by or under this Act, the Secretary of Agriculture is authorized to employ such assistants, clerks, and other persons in the city of Washington and elsewhere, to

The first part of the report is a general  
description of the area. It is a large  
area of land, mostly flat, with some  
low hills in the north. The climate is  
warm and humid, with a lot of rain.  
The population is mostly of Indian  
descent, and they live in small  
villages. The main occupation is  
agriculture, and they grow a lot of  
rice. There are also some small  
industries, like weaving and pottery.  
The government is trying to improve  
the living conditions of the people,  
and is building roads and schools.  
The report also mentions some of the  
problems that the people are facing,  
like lack of money and food. It  
ends with a list of recommendations  
for the government to follow.

The second part of the report is a  
detailed description of the area. It  
gives more information about the  
climate, the population, and the  
economy. It also mentions some of the  
cultural traditions of the people.  
The report is written in a simple  
and clear style, and it is easy to  
read. It is a good example of a  
report that is both informative and  
interesting.



be taken from the eligible lists of the Civil Service Commission, to rent buildings outside of the city of Washington, to purchase such supplies, material, equipment, office fixtures, and apparatus, and to incur such travel and other expense as he may deem necessary for carrying out the purposes of this Act.

"Sec. 10. That the Secretary of Agriculture is authorized to make rules and regulations for carrying out the provisions of this Act.

"Sec. 11. That this Act shall be in force from the date of its passage."

